

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of producing a security document or device comprising a substrate and an optically diffractive device, the method comprising the step of:

irradiating an area of a surface on one side of the substrate [on one surface] with a patterned laser [radiation] beam bearing the pattern of the desired diffractive device to ablate selected portions of the surface and thereby form an optically diffractive structure in said [one] surface.

Claim 2 (currently amended): (Amended) A method of producing a security document or device according to claim 1, the method further comprising the step of:

placing a mask in the path of [the] laser radiation to create said patterned laser [radiation] beam bearing the pattern of the desired diffractive device.

Claim 3 (previously presented): A method of producing a security document or device according to claim 1, wherein the substrate includes a transparent plastics film.

Claim 4 (original): A method of producing a security document or device according to claim 3, wherein the transparent plastics film is formed from polymeric material.

Claim 5 (previously presented): A method of producing a security document or device according to claim 3, wherein the substrate further includes a transparent coating applied to the transparent plastics film, the optically diffractive structure being formed in the transparent coating.

Claim 6 (original): A method of producing a security document or device according to claim 5, wherein the transparent coating is formed from polymeric material.

Claim 7 (previously presented): A method of producing a security document or device according to claim 5, wherein the substrate further includes a reflective coating applied to the transparent coating.

Claim 8 (original): A method of producing a security document or device according to claim 7, wherein the reflective coating is formed from polymeric material containing metallic pigment particles.

Claim 9 (previously presented) A method of producing a security document or device according to claim 7, wherein both the reflective coating and the transparent coating may be formed from material which is similarly resistant to physical degradation.

Claim 10 (previously presented): A method of producing a security document or device according to claim 5, wherein the substrate further includes a transparent layer applied to the transparent coating.

Claim 11 (original): A method of producing a security document or device according to claim 10, wherein the transparent layer is formed from polymeric material.

Claim 12 (previously presented): A method of producing a security document or device according to claim 10, wherein both the transparent layer and the transparent coating are formed from material which is similarly resistant to physical degradation.

Claim 13 (previously presented): A method of producing a security document or device according to claim 3, wherein the substrate further includes a reflective coating applied to

the transparent plastics film, said optically diffractive structure being formed in the reflective coating.

Claim 14 (original): A method of producing a security document or device according to claim 13, wherein the reflective coating is formed from polymeric material containing metallic pigment particles.

Claim 15 (previously presented): A method of producing a security document or device according to claim 13, wherein the substrate further includes a transparent coating applied to the reflective coating.

Claim 16 (original): A method of producing a security document or device according to claim 15, wherein the transparent coating is formed from a polymeric material.

Claim 17 (previously presented): A method of producing a security document or device according to claim 15, wherein both the reflective coating and the transparent coating are made of material which is similarly resistant to physical degradation.

Claim 18 (previously presented): A method of producing a security document or device according to claim 1, the method further comprising the step of:

applying at least one opacifying layer to the substrate, said at least one opacifying layer only partly covering a surface of the substrate to leave at least said optically diffractive device uncovered by said opacifying layer.

Claim 19 (currently amended): A method of producing a security document or device comprising a substrate and [a detectable security device] an optically diffractive device, the method comprising the step of:

exposing an area of a surface on one side the substrate [on one surface] to a

photo-exposure process using a patterned laser beam bearing the pattern of the desired optically diffractive device to generate a changed state in the surface [of the substrate] to produce [a detectable effect in said surface, such as a polarisation pattern or] an optically diffractive structure in said surface.

Claim 20 (currently amended): (Amended) A method of producing a security document or device comprising a substrate and a detectable [security device] polarisation pattern, the method comprising the step of:

exposing an area of a surface on the one side of the substrate [on one surface] to a patterned laser beam bearing the pattern of the desired polarisation pattern [a light source] which [causes photo-polymerisation of the substrate which in turn] produces [a] the desired polarisation [state or] pattern in said surface.

Claim 21 (canceled)

Claim 22 (currently amended): A method according to claim [19] 20 further defined as exposing an area of [the substrate on one] said surface to a photo-exposure process causing photo-polymerisation of said surface to produce the desired polarisation pattern.

Claim 23 (currently amended) A method of producing a security document or device according to claim 20 [or 22] comprising the steps of irradiating an area of [the substrate on one] said surface with the patterned laser beam [radiation] to ablate selected portions of [the] said surface.

Claim 24 (currently amended): A method of producing a security document or device according to claim [23] 20, the method further comprising the step of placing a mask in the path of [the] laser radiation to create said patterned laser [radiation] beam.

Claim 25 (currently amended): A method of producing a security document or device according to either one of claims [20 or 22] 19 or 20, wherein the substrate includes a transparent plastics film.

Claim 26 (previously presented): A method of producing a security document or device according to claim 25, wherein the substrate further includes a transparent coating applied to the transparent plastics film.

Claim 27 (previously presented): A method of producing a security document or device according to claim 26, wherein the substrate further includes a reflective coating applied to the transparent coating.

Claim 28 (previously presented): A method of producing a security document or device according to claim 27, wherein both the reflective coating and the transparent coating may be formed from material which is similarly resistant to physical degradation.

Claim 29 (previously presented): A method of producing a security document or device according to claim 26, wherein the substrate further includes a transparent layer applied to the coating.

Claim 30 (previously presented): A method of producing a security document or device according to claim 29, wherein both the transparent layer and the transparent coating are formed from material which is similarly resistant to physical degradation.

Claim 31 (previously presented): A method of producing a security document or device according to claim 25, wherein the substrate further includes a reflective coating applied to the transparent plastics film.

Claim 32 (previously presented): A method of producing a security document or device according to claim 31, wherein the substrate further includes a transparent coating applied to the reflective coating.

Claim 33 (previously presented): A method of producing a security document or device according to claim 32, wherein both the reflective coating and the transparent coating are made of material which is similarly resistant to physical degradation.

Claim 34 (currently amended): A method of producing a security document or device according to [either of claims 20 or 22] claim 25, the method further comprising the step of applying at least one opacifying layer to the substrate, said at least one opacifying layer only partly covering the surface of the substrate.

Claim 35 (new): (New) A method of producing a security document or device comprising a transparent plastics substrate and a transmissive optically diffractive device, the method comprising:

irradiating an area of a surface on one side of the substrate with a patterned laser beam to ablate selected portions of the surface and thereby form a transmissive optically diffractive structure in said surface.

Claim 36 (new): A method according to claim 35 wherein a mask is placed in the path of laser radiation to create said patterned laser beam bearing the pattern of the desired optically diffractive structure.

Claim 37 (new): A method according to claim 35 wherein the transparent plastics substrate includes a polymeric film material.

Claim 38 (new): A method according to claim 35 wherein the patterned laser beam ablates

selected portions of a surface of the transparent plastics substrate to form the transmissive optically diffractive structure directly in the substrate.

Claim 39 (new): A method according to claim 38 further including the step of applying a transparent coating over the ablated surface of the transparent plastics substrate forming the optically diffractive structure.

Claim 40 (new): A method according to claim 37 wherein the substrate includes a transparent coating applied to the polymeric film material, and the patterned laser beam ablates a surface of the transparent coating to form the optically diffractive structure in the transparent coating.

Claim 41 (new): A method according to claim 40 wherein a transparent layer is applied over the ablated surface of the transparent coating forming the optically diffractive structure.

Claim 42 (new): A method according to claim 35 wherein at least one opacifying layer is applied to at least one surface of the transparent plastics substrate except in the area of the transmissive optically diffractive structure.

Claim 43 (new): A method of producing a security document or device comprising a transparent plastics substrate and a reflective optically diffractive device, the method comprising:

irradiating an area of a surface on one side of the substrate with a patterned laser beam bearing the pattern of the desired diffractive device to ablate selected portions of the surface to form an optically diffractive structure in the surface, wherein the security document or device includes a reflective layer in at least the area of the optically diffractive structure.

Claim 44 (new): A method according to claim 43 wherein a mask is placed in the path of laser radiation to create the patterned laser beam bearing the pattern of the desired optically diffractive structure.

Claim 45 (new): A method according to claim 43 wherein the patterned laser beam ablates selected portions of a surface of the transparent plastics substrate to form the optically diffractive structure directly in the transparent substrate, and the reflective layer is subsequently applied over the optically diffractive structure.

Claim 46 (new): A method according to claim 43 wherein the substrate includes a transparent plastics film and a transparent coating, a surface of the transparent coating is irradiated with the patterned laser beam to form the optically diffractive structure in the transparent coating, and the reflective layer is subsequently applied over the optically diffractive structure.

Claim 47 (new): A method according to claim 43 wherein the reflective layer is applied to the transparent plastics substrate and an area of a surface of the reflective layer is irradiated with the patterned laser beam to ablate selected portions of the surface to form the optically diffractive structure in the reflective layer.

Claim 48 (new): A method according to claim 47 wherein a transparent coating is applied to the reflective layer over the optically diffractive structure.

Claim 49 (new): A method according to claim 43 wherein at least one opacifying layer is applied to at least one surface of the transparent plastics substrate.

Claim 50 (new): A method according to claim 43 wherein at least one opacifying layer is applied to a surface of the substrate except in the area of the reflective optically diffractive

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structure.

Claim 51 (new): A security document or device incorporating an optically diffractive device made by the method of claim 1.

Claim 52 (new): A security document or device incorporating an optically diffractive device made by the method of claim 19.

Claim 53 (new): A security document or device incorporating a detectable polarisation pattern made by the method of claim 20.

Claim 54 (new): A security document or device incorporating a transmissive optically diffractive device made by the method claim 35.

Claim 55 (new): A security document or device incorporating a reflective optically diffractive device made by the method of claim 43.